

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in the application:

1-15 (Cancelled).

16. (Currently Amended) A An isolated or purified heptahelix receptor having an amino acid sequence comprising the sequence

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1	NHTTSSAAPPFLGVEFISLLAIIILLVALAVGLFGHSFVV	40
41	USILKRNORRSVTALNVLMLALADLAVLLTAPFFLHFLAQ	80
81	GTUSFGLAGCALCHYVCGVSNYASVLLITANSIDRSLAVA	120
121	RPFVSOKLATKANARRVLAGINVLFLATPVLATRTVVF	160
161	WRTNHSCLTFPTFSEGNRAFNLIIEAVTGFLLPFLAVVAS	200
201	YSDIGRRLQARRRARSRTGRLYVLLITFAAFNLPYHV	240
241	NLAERARRALAGDAAGLGLVGKRLSLARVLIALLAFSSSV	280
281	NPVLYACAGGGLRSAGVGFVAKLLEGCTGSEASSTRGGS	320
321	LGOTARRSGPAALEFGPSESLEYASSPLKINELN	352

]

of SEQ ID NO:2.

17-37 (Cancelled).

38. (New) An isolated or purified heptahelix receptor encoded by a nucleic acid sequence present in plasmid clone Lyme21-9.

39. (New) The heptahelix receptor of claim 38, wherein the receptor is encoded by a sequence present in SEQ ID NO:1.

40. (New) The receptor of claim 16, wherein the receptor has an amino acid sequence consisting of the sequence of SEQ ID NO:2.

41. (New) The receptor of claim 16, wherein the receptor is encoded by a nucleic acid sequence present in SEQ ID NO:1.

42. (New) The receptor of claim 16, wherein the receptor is a recombinant receptor.

43. (New) A method for assaying a ligand for a heptahelix receptor, said method comprising:

providing a heptahelix receptor encoded by a nucleotide sequence present in plasmid clone Lyme21-9;

incubating the receptor with a test sample suspected of containing the ligand;
and

detecting binding between the receptor and the ligand,

wherein binding indicates that a ligand for the receptor is present in the sample.

44. (New) The method of claim 43, wherein the heptahelix receptor is expressed on a cellular membrane of a host cell transfected or transduced with DNA encoding the receptor.

45. (New) The method of claim 44, wherein detecting is accomplished by measuring intracellular calcium levels in the host cell.

46. (New) A method for assaying for an agonist of leukotriene B4 binding to a heptahelix receptor encoded by a nucleotide sequence present in plasmid clone Lyme21-9, said method comprising:

providing a heptahelix receptor encoded by a nucleotide sequence present in plasmid clone Lyme21-9;

providing leukotriene B4;

incubating the receptor and the leukotriene B4 together in the presence or absence of a test sample suspected of containing the agonist; and

detecting binding between the receptor and the leukotriene B4;

wherein increased binding of the leukotriene B4 with the receptor in the presence of the test sample compared to binding in the absence of the test sample indicates the presence of an agonist in the sample.

47. (New) The method of claim 46, wherein the heptahelix receptor is expressed on a cellular membrane of a host cell transfected or transduced with DNA encoding the receptor.

48. (New) The method of claim 47, wherein detecting is accomplished by measuring intracellular calcium levels in the host cell.

49. (New) A method for assaying a ligand for a heptahelix receptor, said method comprising:

providing a heptahelix receptor encoded by a nucleotide sequence present in plasmid clone Lyme21-9;

incubating the receptor with a test sample suspected of containing the ligand;
and

detecting binding between the receptor and the ligand;

wherein binding indicates that a ligand for the receptor is present in the sample.

50. (New) The method of claim 49, wherein the heptahelix receptor is expressed on a cellular membrane of a host cell transfected or transduced with DNA encoding the receptor.

51. (New) The method of claim 49, wherein detecting is accomplished by measuring intracellular calcium levels in the host cell.